

PUMP ASSEMBLIES

This manual covers Lube Pump Assemblies. Lube pump assemblies are designed to be mounted directly to the drive. Each assembly comes complete including suction and return hoses. Included components are: electric motor, oil pump, pump adapter and coupling, and all hoses and fittings.

NON-STANDARD FEATURES

Oil Flow Indicator/Switch

An oil flow indicator/switch can be added to give a visual indication that oil is flowing through the lube system. It can also be wired to the main motor controls to shut the main motor off if flow through the lube system stops. Wiring the flow indicator/switch to the main motor control will insure the pump is running before the main motor is started.

Temperature Switch/Sump Heater

When lube assemblies on gear drives are started, oil in the gear drive sump will not be at operating temperature, and may be at viscosities exceeding 2160 cSt (10000 SSU). Startups with oil at elevated viscosity levels may result in pump cavitation, pump motor overload, and damage to components. Where cold start conditions (reference table 1 for minimum oil temperatures) are anticipated a temperature switch along with a sump heater should be used. The temperature switch should be wired to start the pump motor at acceptable viscosities in the gear drive. See Figure 1. The standard temperature switch has a NEMA 4 aluminum enclosure. Other types of enclosures are available at an extra charge.

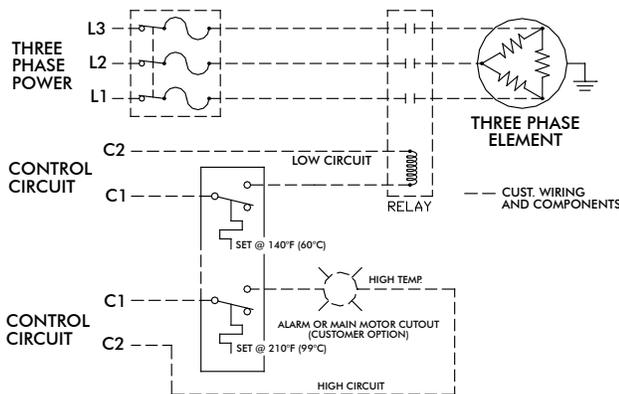


FIGURE 1 — Temperature Switch Wiring Diagram

Oil Pressure Switch

Gear oils have a wide range of viscosity conditions depending on the temperature and grade of the oil. This change in viscosity (temperature of the oil) has a direct affect to the operating pressure of the lube system and a set point cannot be determined.

For a summary of the electrical and performance specifics reference the gear drive certified print.

INSTALLATION INSTRUCTIONS

WARNING: Lock out power source and remove all external loads from drive before servicing the drive or accessories.

Lube pump assemblies are designed to be mounted directly to the gear drive. All mounting brackets and plumbing connections are typically installed at the factory. If a lube pump is being fitted to an existing gear drive contact the factory to obtain the brackets, suction hose, and return hose. It is not recommended to modify the factory brackets or plumbing. Refer to the gear drive certified print for dimensions, weights, designation of components, and location of the hook-up points.

The location of the Pump Assembly must be free of lint, dirt, etc. to maintain efficient operation of the assembly.

WARNING: To reduce risk of fire, electric shock, or personal injury, observe the following:

1. Switch off the main power supply and lock out before installing, servicing or making connections to the motor.
2. Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and Occupational Safety and Health Act (OSHA).
3. Installation work and electrical wiring must be done by a qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
4. Motor must be securely and adequately grounded.
5. All working parts should be grounded.
6. Refer to the certified print for the NEMA rating of the lube pump assembly motor(s). Proper care should be taken to assure this rating is within the rating of the application.

Installation

1. Check if the information on the motor plate is in accordance with the actual main supply voltage, phase, and frequency.
2. Determine if gear drive is equipped with a temperature switch, the set point should be set in accordance to the minimum temperatures shown in Table 1.
3. Make sure all hardware, hoses, and fittings are oil tight.
4. The lube pump should be set to start approximately 5 minutes before the gear drive or inching drive is started.

Startup

Note, never operate the oil pump dry. Fill the gear drive to capacity before starting pump. Running the pump dry can cause pump failure.

1. Fill gear drive with oil to level indicated on dip stick.
2. Start the oil pump and verify the correct rotation. Refer to drawings and rotation arrows on the side of the pump for the correct rotation. Incorrect rotation of the oil pump will result in no flow of oil for gear drive and lubrication system.
3. Run the motor long enough to purge any air that might be in the lube system.
4. After the air is purged and there is flow of oil, shut off the motor and let sit for approximately 5 minutes.
5. Re-check the oil level in the gear drive.
6. Add additional oil as needed before starting gear drive. Some oil will have filled the pump oil lines.

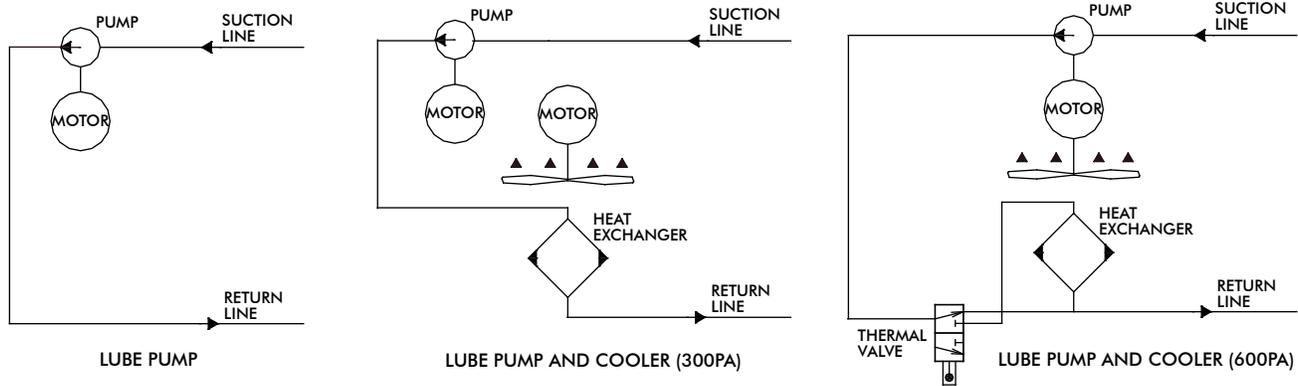


FIGURE 2 — Typical Lube Pump Arrangements

OPERATION

Never exceed the maximum allowable temperature and/or pressure ratings of any of the components. The maximum allowable viscosity for the oil pump is 2160 cSt (10,000 SSU, see Table 1). Any instructions or directions that are provided on the certified drawings supersede this manual. The maximum operating gear drive oil sump temperature is 200°F (93°C) and a maximum gear drive shutdown temperature of 210°F (99°C) shall be used.

NOTE: Synthetic oils are designed to operate at higher temperatures than conventional gear oils. Consult Factory for the recommended maximum operating temperature of the oil.

TABLE 1 — Oil Temperature & Maximum Viscosity

Oil	Temperature	Viscosity
AGMA 4 (ISO 150)	30°F (-1.1°C)	2160 cSt
AGMA 5 (ISO 220)	40°F (4.4°C)	2160 cSt
AGMA 6 (ISO 320)	50°F (10°C)	2160 cSt
AGMA 7 (ISO 460)	60°F (15.6°C)	2160 cSt

Force Lubrication

Gear drives coupled with inching drives require force lubrication to the bearings and to the gear mesh(s). These gear drives feature external and internal lubrication lines distributing oil from the lube pump assembly to the components that require force lubrication. The lube assembly **MUST** be started before the gear drive is started. A rule of thumb is to have the lube pump operating for approximately 5 minutes before the gear drive is started. The time the lube pump is in operation before the gear drive is started can be adjusted.

MAINTENANCE

WARNING: Lock out power source and remove all external loads from drive before servicing the drive or accessories.

For detailed maintenance instructions and specifications on components such as motor, oil pump, etc, refer to the product manufacturer’s literature.